

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

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PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing
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26.10.2004

Applicant's or agent's file reference
A3232.WO194

IMPORTANT NOTIFICATION

International application No.
PCT/IB 03/03205

International filing date (day/month/year)
14.07.2003

Priority date (day/month/year)
25.07.2002

Applicant
AZIONARIA COSTRUZIONI MACCHINE AUTOMATICHE...et al

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international
preliminary examining authority:



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PCT



REC'D 27 OCT 2004

INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference A3232.WO194	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/IB 03/03205	International filing date (day/month/year) 14.07.2003	Priority date (day/month/year) 25.07.2002
International Patent Classification (IPC) or both national classification and IPC B31B1/16		
Applicant AZIONARIA COSTRUZIONI MACCHINE AUTOMATICHE...et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 10 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 16 sheets.

3. This report contains indications relating to the following items:
- I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☒ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 19.02.2004	Date of completion of this report 26.10.2004
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Johne, O Telephone No. +49 89 2399-7232 <div style="text-align: right;">  </div>

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/IB 03/03205**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

2-4, 6-21 as originally filed
1, 5 received on 03.09.2004 with letter of 01.09.2004

Claims, Numbers

1-27 received on 03.09.2004 with letter of 01.09.2004

Drawings, Sheets

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees, the applicant has:

- ☐ restricted the claims.
☐ paid additional fees.
☐ paid additional fees under protest.
☒ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
☒ not complied with for the following reasons:

see separate sheet

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☐ all parts.
☒ the parts relating to claims Nos. 1-3,14-17,20-23,27 .

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-3,14-17,20-23,27
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-3,14-17,20-23,27
Industrial applicability (IA)	Yes: Claims	1-3,14-17,20-23,27
	No: Claims	

2. Citations and explanations

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see separate sheet

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Re Item IV

1. The separate groups of inventions are:

Group 1, new claims: 1-3,14-17,20-23,27
feed path circumscribes the supporting structure

Group 2, new claims: 4-11,19
preforming of the forming material

Group 3, new claim : 18
transfer device with gripper

Group 4, new claims: 24-26
welding station located downstream of folding station

Group 5, new claims: 12,13
sterilizing the forming material

2. The features common to the five groups of inventions are the features of claim 1.
3. The prior art has been identified as:

D1: US-A-5069021
D2: CH-A-413339

4. Claim 1 does not involve an inventive step for the following reasons:

Document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document) a system for manufacturing containers (9) comprising a supporting structure whereas the system is composed entirely of parts associated with the supporting structure (see fig. 2), namely:

- a forming sector (20, 21, 40) supplied with a continuous strip of forming material (2) used in the preparation of at least one blank (7) from which to fashion a respective container (9), and establishing a first leg of a feed path followed by the material (see fig. 1, ref. no. 20, 21, 22);
- a transfer device (25) operating downstream of the forming sector, serving to

distance the forming material (7) from the forming sector and establishing a second leg of the feed path followed by the material (see fig. 1 and column 7, lines 57 to 62);

- and a shaping sector (8) operating downstream of the forming sector, by which each blank (7) emerging from the forming sector is folded and caused ultimately by means of a fixing operation (70) to assume the shape of the container (9) produced by the folding step, the shaping sector (8) establishing a third leg of the feed path followed by the forming material (see fig. 1, ref. no. 8, 9);
- the first leg of the feed path extending substantially parallel to the longitudinal dimension of the supporting structure (see fig 2, ref. no. 20);
- the second leg of the feed path extending transversely to the first leg (see figs. 1 and 2, ref. no. 7, 25 and column 7, lines 57 to 60);
- the third leg of the feed path extending substantially parallel to the first leg and transversely to the second leg (see figs. 1 and 2, ref. no. 8 and column 7, line 67 to column 8, line 6 as well as column 9, lines 7 to 8).

Therefore, the subject-matter of claim 1 differs from this known document D1 in that the legs are disposed in such a manner that the forming material will follow a feed path extending externally of the supporting structure in part, and presenting substantially a letter-C configuration by which the supporting structure is circumscribed in part.

The letter-C configuration leads to less space required by the system as a whole and by the arrangement of the feed path externally of the supporting structure in part the system is accessible for maintenance or repair.

The problem to be solved by the present invention may therefore be regarded as to achieve a compact arrangement of the system while keeping the system accessible.

The requirement of compact arrangement of systems and the requirement of accessibility come within the scope of the customary practice followed by persons skilled in the art. The skilled person would therefore regard it as a normal design option to change the configuration of the legs of the feed path in a letter-C configuration in order to solve the problem posed, especially as the letter-C configuration of a feed path is known in the specific field of manufacturing containers (see for example D2 fig. 12). Moreover, by these distinguishing features no unexpected technical effect and no surprising effect is achieved.

Consequently, the subject-matter of claim 1 does not involve an inventive step.

5. The following problems and potential special technical features which solve these problems, can be identified in the different groups of claims:

- Group 1: The objective problem to be solved is to provide a compact system for manufacturing containers. This problem is solved by a feed path which circumscribes the supporting structure;
- Group 2: The objective problem to be solved is to weaken the structure of the forming material along the crease lines (see page 14, lines 4 to 13). This problem is solved by preforming of the forming material;
- Group 3: The objective problem to be solved is to provide means for conveying single blanks. This problem is solved by a transfer device with gripper element;
- Group 4: The objective problem to be solved is to add to the state of the art an alternative shaping sector. This problem is solved by a welding station which is located downstream of folding station;
- Group 5: The objective problem to be solved is to be able to use the containers for food products. This problem is solved by sterilizing the forming material;

Since the problems to be solved by the five inventions and the features which solve these problems are different, the different technical features cannot be considered to be corresponding special technical features as required by PCT Rule 13.2.

Since no additional examination fees have been paid, the subsequent examination has been restricted to Group 1, i.e. claims 1-3,14-17,20-23 and 27.

Re Item V

1. Reference is made to the following documents:

D1: US-A-5069021
D2: CH-A-413339
D3: US-A-5704541

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of new claims 1 to 3, 14 to 17, 20 to 23 and 27 does not involve an inventive step in the sense of Article 33(3) PCT.

2.1. Claim 1:

Document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document) a system for manufacturing containers (9) comprising a supporting structure whereas the system is composed entirely of parts associated with the supporting structure (see fig. 2), namely:

- a forming sector (20, 21, 40) supplied with a continuous strip of forming material (2) used in the preparation of at least one blank (7) from which to fashion a respective container (9), and establishing a first leg of a feed path followed by the material (see fig. 1, ref. no. 20, 21, 22);
- a transfer device (25) operating downstream of the forming sector, serving to distance the forming material (7) from the forming sector and establishing a second leg of the feed path followed by the material (see fig. 1 and column 7, lines 57 to 62);
- and a shaping sector (8) operating downstream of the forming sector, by which each blank (7) emerging from the forming sector is folded and caused ultimately by means of a fixing operation (70) to assume the shape of the container (9) produced by the folding step, the shaping sector (8) establishing a third leg of the feed path followed by the forming material (see fig. 1, ref. no. 8, 9);
- the first leg of the feed path extending substantially parallel to the longitudinal dimension of the supporting structure (see fig 2, ref. no. 20);
- the second leg of the feed path extending transversely to the first leg (see figs. 1 and 2, ref. no. 7, 25 and column 7, lines 57 to 60);
- the third leg of the feed path extending substantially parallel to the first leg and transversely to the second leg (see figs. 1 and 2, ref. no. 8 and column 7, line 67 to column 8, line 6 as well as column 9, lines 7 to 8).

Therefore, the subject-matter of claim 1 differs from this known document D1 in that the legs are disposed in such a manner that the forming material will follow a feed path extending externally of the supporting structure in part, and presenting substantially a letter-C configuration by which the supporting structure is circumscribed in part.

The letter-C configuration leads to less space required by the system as a whole and by the arrangement of the feed path externally of the supporting structure in part the system is accessible for maintenance or repair.

The problem to be solved by the present invention may therefore be regarded as to achieve a compact arrangement of the system while keeping the system accessible.

The requirement of compact arrangement of systems and the requirement of accessibility come within the scope of the customary practice followed by persons skilled in the art. The skilled person would therefore regard it as a normal design option to change the configuration of the legs of the feed path in a letter-C configuration in order to solve the problem posed, especially as the letter-C configuration of a feed path is known in the specific field of manufacturing containers (see for example D2 fig. 12). Moreover, by these distinguishing features no unexpected technical effect and no surprising effect is achieved.

Consequently, the subject-matter of claim 1 does not involve an inventive step.

2.2. Claims 2, 3, 14 to 17, 20 to 23 and 27:

The additional features of dependent claims 2, 3, 14 to 17, 20 to 23 and 27 are merely functional design arrangements which are either known from the prior art (see D1 fig. 1, ref. no. 7 for claim 2; D1 fig. 1, ref. no. 8 for claim 3; D1 fig. 2, ref. no. 40, 42 for claims 14 to 16; D3 figs 2, 3 ref. no. 18, 26 and column 3, lines 14 to 28 for claims 20 and 22; D1 fig. 2, ref. no. 25, 41 and column 9, lines 7 to 8 for claim 27) or come within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can be readily contemplated in advance.

Consequently, the subject-matter of dependent claims 2, 3, 14 to 17, 20 to 23 and 27 do not appear to contain any additional features which, in combination with the

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features of any claim to which they refer, meet the requirements of the PCT with respect to inventive step.

3. Further remarks:

- 3.1. The reference to claim 10 in claim 21 leads to unclarity (Article 6 PCT) and was ignored for the purpose of examination.
- 3.2. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this document identified therein.

Description

A system and a method for manufacturing containers,
in particular for preserving food products

Technical Field

The present invention relates to a system for the manufacture of containers, in particular for preserving food products, of which the characterizing features are as recited in claim 1 appended.

5 ~~The invention relates also to a method of manufacturing containers, in particular for preserving food products, of which the essential features are as recited in the preamble of claim 30 appended.~~

Background Art

10 More particularly, the invention finds application in the art field concerned with the manufacture of containers such as bottles and cartons and the like, having a structure fashioned from multilayer or coated paper material and utilized for packaging
15 liquid foods or edible products in general, typically milk, fruit juices, yoghurt, mineral water and other such substances.

20 It is common practice for containers of the type in question to be manufactured on a system consisting in a number of separate machines by which a selected

Disclosure of the Invention

These objects and others besides, which will emerge more clearly from the following specification, are substantially realized in a system for manufacturing containers, in particular for preserving foods, of which the characterizing features are as recited in claim 1 appended.

~~In addition, the stated objects are realized according to the present invention in a method of manufacturing containers, in particular for preserving foods, of which the characterizing features are as recited in claim 30 appended.~~

The invention will now be described in detail, by way of example, with the aid of the accompanying drawings, in which:

- 15 -figure 1 is a schematic illustration of a system for manufacturing containers according to the present invention, viewed in plan;
- figure 2 is a further schematic illustration of the system of figure 1, viewed in elevation;
- 20 -figure 3 shows a continuous strip of forming material with a bonding edge utilized by the system of figures 1 and 2, illustrated fragmentarily in perspective and in a first possible embodiment;
- figure 4 shows a continuous strip of forming material with a bonding edge utilized by the system of figures 1 and 2, illustrated fragmentarily in perspective and in a second possible embodiment;
- 25 -figure 5 is a sectional illustration of a container fashioned from the continuous strip of figure 3;

22bis

1) A system for manufacturing containers, in particular for preserving food products, comprising a supporting structure (2), the system (1) being composed entirely of parts associated with the supporting structure (2), namely:

- a forming sector (3) supplied with a continuous strip (8, 12) of forming material (9) used in the preparation of at least one blank (4) from which to fashion a respective container (5), and establishing a first leg (B) of a feed path followed by the material (9);

- a transfer device (20) operating downstream of the forming sector (3), serving to distance the forming material (9) from the forming sector (3) and establishing a second leg (C) of the feed path followed by the material;

- and a shaping sector (6) operating downstream of the forming sector (3), by which each blank (4) emerging from the sector (3) is folded and caused ultimately by means of a fixing operation to assume the shape of the container (5) produced by the folding step, the shaping sector (6) establishing a third leg (D) of the feed path followed by the forming material (9);

- the first leg (B) of the feed path extending substantially parallel to the longitudinal dimension of the supporting structure (2);

- the second leg (C) of the feed path extending transversely to the first leg (B);

22ter

- the third leg (D) of the feed path extending substantially parallel to the first leg (B) and transversely to the second leg (C);

5 characterised in that

- the legs (B, C, D) are disposed in such a manner that the forming material (9) will follow a feed path (A) extending externally of the supporting structure (2) at least in part, and presenting substantially a
10 letter-C configuration by which the supporting structure is circumscribed at least in part.

Claims

~~1) A system for manufacturing containers, in particular for preserving food products, comprising a supporting structure, and characterized in that it is a system (1) composed entirely of parts associated with the supporting structure (2), namely: a forming sector (3) supplied with a continuous strip (8, 12) of forming material (9) used in the preparation of at least one blank (4) from which to fashion a respective container (5), and establishing a first leg (B) of a feed path followed by the material (9), a transfer device (20) operating downstream of the forming sector (3), serving to distance the forming material (9) from the forming sector (3) and establishing a second leg (C) of the feed path followed by the material, and a shaping sector (6) operating downstream of the forming sector (3), by which each blank (4) emerging from the sector (3) is folded and caused ultimately by means of a fixing operation to assume the shape of the container (5) produced by the folding step, the shaping sector (6) establishing a third leg (D) of the feed path followed by the forming material (9). <insert pages 22bis, 22ter>~~

2) A system as in claim 1, wherein the forming sector (3) and the shaping sector (6) are arranged in line operationally, so that the path followed by the forming material (9) when advancing between the

forming sector (3) and the shaping sector (6) is substantially linear.

3) A system as in claim 2, wherein the shaping sector (6) comprises at least two substantially parallel shaping lines (6a) onto which the forming material (9) emerging from the forming sector (3) is directed.

~~4) A system as in claim 1, wherein the first leg (B) of the feed path extends substantially parallel to the longitudinal dimension of the supporting structure (2); the second leg (C) of the feed path extends transversely to the first leg (B); and the third leg (D) of the feed path extends substantially parallel to the first leg (B) and transversely to the second leg (C).~~

~~5) A system as in claim 4, wherein the legs (B, C, D) are disposed in such a manner that the forming material (9) will follow a feed path (A) extending externally of the supporting structure (2) at least in part, and presenting substantially a letter C configuration by which the supporting structure is circumscribed at least in part.~~

4) A system as in claims 1 to 3, wherein the forming sector (3) comprises: a feed station (7) supplying the forming material (9); a cutting station (19) operating downstream of the feed station (7), by

which the forming material (9) is divided into a succession of discrete lengths each constituting a respective blank (4); a scoring station (18) operating downstream of the feed station (7), by which at least one crease line (4a) is applied to each length of forming material (9) constituting a blank (4); and a preforming station (21) operating downstream of the feed station (7), by which the forming material (9) is bent initially along the crease line (4a).

7 5) A system as in claim 4, wherein the feed station (7) comprises at least one main supply reel (10) carrying a coiled continuous strip (8) of the forming material (9) and rotatable about a respective longitudinal axis (X) in such a way that the continuous strip (8) of forming material (9) can be decoiled.

8 6) A system as in claim 5, wherein the feed station (7) comprises at least one auxiliary supply reel (11) carrying a further continuous strip (12) of the forming material (9) that can be spliced to the continuous strip (8) of the main reel (10) to guarantee continuity of the supply of forming material (9), each supply reel (10, 11) being replaceable, on final depletion of the relative forming material (9), with a further reel (10, 11) carrying a fresh supply of the forming material (9).

5 7) A system as in claims ~~6~~ 4 to ~~8~~ 6, where claim 6 is dependent on claim 4 or 5, wherein the first leg (B) of the feed path (A) followed by the forming material (9) is established by a plurality of guide elements (13) constituting part of the feed station (7).

10 ~~10~~ 8) A system as in claims ~~7~~ 5 to ~~9~~ 7, further comprising a traction device (14) operating by direct interaction with the forming material (9) at a point downstream of the feed station (7) and serving to decoil the selfsame material from the relative supply reel (10, 11).

15 ~~11~~ 9) A system as in claim ~~10~~ 8, wherein the traction device (14) comprises a pair of pinch rolls (14a), positioned mutually tangential and establishing a passage (14b) through which the forming material (9) is directed, including at least one roll (14a) that can be power driven in rotation to the end of advancing the forming material (9) through the
20 passage (14b) of the device (14).

~~12~~ 10) A system as in claim ~~10~~ 8 or ~~11~~ 9, further comprising at least one tensioning device (16) operating upstream of the traction device (14) and in such a manner that the segment of forming material
25 (9) extending downstream of the selfsame device (16) is subjected to a predetermined longitudinal tension.

- ~~13~~ 11) A system as in claim ~~12~~ 10, wherein the tensioning device (16) comprises at least one pair of pinch rolls (16a), positioned mutually tangential and establishing a passage (16b) through which the forming material (9) is directed, including at least one roll (16a) subjected to a braking action when in rotation in such a way as to tension the forming material (9) advancing through passage (16b) of the device (16).
- 10 ~~14~~ 12) A system as in claims ~~5~~ 1 to ~~13~~ 11, comprising at least one sterilizing device (17) operating along the feed path (A) followed by the forming material (9) and serving to debacterialize the selfsame material.
- 15 ~~15~~ 13) A system as in claim ~~14~~ 12 where dependent on claim 12, wherein the sterilizing device (17) operates on the forming material (9) at a point between the tensioning device (16) and the traction device (14).
- 20 ~~16~~ 14) A system as in claims ~~5~~ 1 to ~~15~~ 13, wherein the scoring station (18) is positioned to operate at a point along the feed path (A) followed by the forming material (9), between the feed station (7) and the cutting station (19).
- 25 ~~17~~ 15) A system as in claim ~~16~~ 14, wherein the scoring station (18) comprises at least one press (18a) presenting mutually opposed dies (18b) offered to the two faces of the forming material (9), capable

of alternating between an idle position in which the dies (18b) are distanced from the forming material (9) interposed between them, and an operating position in which they are brought together forcibly against the forming material (9) in such a way as to generate the crease line (4a).

~~16~~ 16) A system as in claim ~~17~~ 15, wherein the cutting station (19) comprises at least one blade (19a) positioned to operate in close proximity to the scoring station (18) in such a way that the forming material (9) can be cut immediately adjacent to the press (18a), capable of alternating between an idle position distanced from the forming material (9), and an operating position of engagement with the selfsame material (9), in which a blank (4) is separated.

~~17~~ 17) A system as in claim ~~18~~ 16, wherein the blade (19a) of the cutting station (19) can be timed to alternate between the idle position and the operating position synchronously with the movement of the press (18a) of the scoring station (18) between the relative idle position and operating position, in such a manner that the press (18a) of the scoring station (18) and the blade (19a) of the cutting station (19) are made to engage the advancing forming material (9) simultaneously.

~~18~~ 18) A system as in claims ~~4~~ 1 to ~~19~~ 17, wherein the transfer device (20) comprises at least one

gripper element (20b) serving to take up each blank (4) of forming material (9) released from the cutting station (19), and capable of movement along the second leg (C) of the feed path between the cutting station (19) and the shaping sector (6) to the end of advancing each successive blank (4).

~~21~~ 19) A system as in claims ~~6~~ 4 to ~~20~~ 18, wherein the prefolding station (21) operates at a point on the second leg (C) of the feed path downstream of the cutting station (19), in such a manner as to initiate a bend in the length of forming material (9) constituting each blank (4) along the relative crease line (4a) generated by the scoring station (18).

~~22~~ 20) A system as in claims ~~5~~ 1 to ~~21~~ 19, further comprising a finishing device (22) associated with the feed station (7) and designed to operate on at least one bonding edge (4b) of the advancing forming material (9) in such a way that the bonding edge of the single blank (4) is rendered suitable for positioning on the inside of the relative container (5).

~~23~~ 21) A system as in claim ~~22~~ 20 where dependent on claim ~~12~~ 10, wherein the finishing device (22) operates between the tensioning device (16) and the traction device (14).

~~24~~ 22) A system as in claim ~~22~~ 20 or ~~23~~ 21, wherein the finishing device (22) comprises: seam-folding

means by which the bonding edge (4b) is bent double along its length in such a way that the bonding edge (4b) of each blank will present a treated portion directed toward the inside of the relative container (5); also fixing means by which to secure the bonding edge (4b) in the bent configuration.

23) A system as in claim ~~22~~ 20 or ~~23~~ 21, wherein the finishing device (22) comprises application means by which to lay a fillet of treated material (23) over the raw edge of the advancing material (9), so that the bonding edge (4b) of each blank will be covered by a layer of material suitable for positioning on the inside of the relative container (5).

24) A system as in claims 1 to ~~21~~ 19, wherein the shaping sector (6) comprises: a folding station (24) at which each blank (4) is bent along the crease lines (4a) in such a way as to take on the shape of the container (5) being manufactured, and a sealing or welding station (25) located downstream of the folding station (24), where each blank (4) is secured in the configuration presented on emerging from the folding station (24) to assume the definitive shape of the relative container (5).

25) A system as in claim ~~26~~ 24, wherein the sealing or welding station (25) comprises at least one sealer or welder such as will fix each blank (4)

in the definitive configuration of the manufactured container (5).

5 ~~26~~ 26) A system as in claim ~~26~~ 24 or ~~27~~ 24, further comprising an assembly station (26) operating between the folding station (24) and the sealing or welding station (25) and serving to apply at least one neck (5a) to each folded blank (4) emerging from the folding station (24), wherein each neck (5a) is fixed to the folded blank (4) at the sealing or welding station (25) through the agency of the sealer or welder.

15 ~~27~~ 27) A system as in claims ~~4~~ 1 to ~~26~~ 26, further comprising feed means associated with the supporting structure (2) and serving to guarantee the movement of the forming material (9) between the stations (7, 18, 19, 21, 24, 25) of the system (1), wherein such means comprise the transfer device (20) and cause the forming material (9) to pass from one station (7, 18, 19, 21, 24, 25) to the next substantially at a predetermined and uniform tempo.

25 ~~30) A method of manufacturing containers, in particular for preserving food products, comprising the steps of: forming a succession of blanks (4) from which to fashion respective containers (5), by dividing a continuous strip (8, 12) of forming material (9) into discrete lengths; shaping each blank (4) obtained by way of the forming step, in~~

~~such a way as to assume a definitive and permanent configuration, characterized in that the steps of forming the blanks (4) and shaping the containers (5) are implemented continuously on a single system (1), without any break in continuity between the forming step and the shaping step.~~

~~31) A method as in claim 30, wherein the step of forming the blanks (4) comprises the single steps of: causing a continuous strip (8, 12) of forming material (9) to advance along a feed path; scoring the forming material (9) along at least one crease line (4a) occupying a portion of the material (9) that will ultimately provide a blank (4); cutting the continuous strip (8, 12) of the forming material (9) to separate at least one discrete length constituting a blank (4); bending the forming material (9) of each blank (4) along the crease lines (4a).~~

~~32) A method as in claim 31, wherein the steps of scoring and of cutting the forming material (9) are implemented simultaneously.~~

~~33) A method as in claim 31, wherein the step of folding the forming material (9) of each blank (4) is implemented after the scoring and cutting steps.~~

~~34) A method as in claim 31, further comprising a finishing step, preceding the scoring step, by which at least one bonding edge (4b) of the continuous~~

~~strip of forming material (9) is prepared in such a way as will render it suitable for positioning on the inside of the relative container (5).~~

5 ~~35) A method as in claim 34, wherein the step of preparing the bonding edge (4b) comprises the single steps of: folding the edge (4b) double longitudinally against the face of the material (9) opposite the face that will be located ultimately on the inside of the container (5), to produce two thicknesses of~~
10 ~~material breasted fully in contact, securing the two thicknesses of folded material permanently together so that the external surfaces of the double folded bonding edge (4b) will be offered ultimately to the inside of the container (5).~~

15 ~~36) A method as in claim 34, wherein the step of preparing the bonding edge (4b) comprises the step of applying at least one fillet (23) of treated material to the raw edge of the forming material (9) along its full length, so that the bonding edge (4b) will be~~
20 ~~covered entirely by a portion of material suitable for positioning on the inside of the relative container (5).~~

~~37) A method as in claims 30 to 36, wherein the step of shaping each blank (4) to produce a respective~~
25 ~~container (5) comprises the single steps of: bending the blank (4) further along the crease line (4a) to obtain the definitive shape of the container (5).~~

~~fixing each blank (4) in the configuration produced
by the further bending step.~~

5 ~~39) A method as in claims 30 to 37, further
comprising at least one step of sterilizing the
forming material (9) advancing along the feed path.~~

10 ~~39) A method as in claims 30 to 38, wherein the
forming material (9) is caused to advance at a
predetermined rate of feed in such a way that
different processing steps will be performed on the
same material (9) substantially at the same
time.~~